

SOME NEW DIASPIDINI
(COCCOIDEA : HOMOPTERA) FROM AFRICA

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SOME NEW DIASPIDINI (COCCOIDEA : HOMOPTERA) FROM AFRICA

By D. J. WILLIAMS

SINCE Hall (1946) published his work on the Ethiopian Diaspidini a number of new species have appeared among collections sent for identification from Africa. Five of these are described below as new.

It seems evident that the known Diaspidini from the Ethiopian Region represent a small proportion of those still to be discovered. Collecting has been associated mainly with some problems of economic importance and the coccid fauna is completely unknown in many areas. The following species collected from various parts of the African continent belong to four genera. They show some interesting features and give us further clues to distribution. One of them is recorded as doing severe damage to sisal.

The holotypes are deposited in the British Museum (Natural History).

Fulaspis karroo sp. n.

(Text-fig. 1)

Female scale yellowish white, elongate, exuviae pale brown, about 1.5 mm. long. Male scale 1 mm. long, whitish and smooth, uncarinated, exuviae pale brown. On the stems and under surfaces of the leaves.

Adult female fusiform measuring about 1.2 mm. long, body membranous except for pygidium. Antennae each with 1 short and 3 long setae. Anterior spiracles with 1 or 2 pores.

Pygidium rounded, anal ring situated towards base. Median lobes well developed, set well apart, divergent and rounded at apices, edges slightly serrated. Second lobes with inner lobules narrower than median lobes but often projecting more posteriorly, longer than wide, rounded at apex; outer lobule similar but smaller. Third lobes paired but much smaller than other lobes. Gland spines forked at apices, there being a pair between median lobes, these slightly shorter than lobes, others longer and arranged singly on margins of fifth to seventh segments and in pairs on third and fourth segments, those on seventh segment often curved beneath outer lobules of second lobes.

Marginal macroducts numbering 6 on each side of pygidium, second to third and fourth to fifth paired and each duct on segment 4 slightly smaller than others. A single macroduct also present between median lobes but inclining to either one or other of lobes, rarely with a pair of ducts between lobes. Dorsal ducts numerous but much smaller than marginal macroducts, becoming smaller anteriorly, there

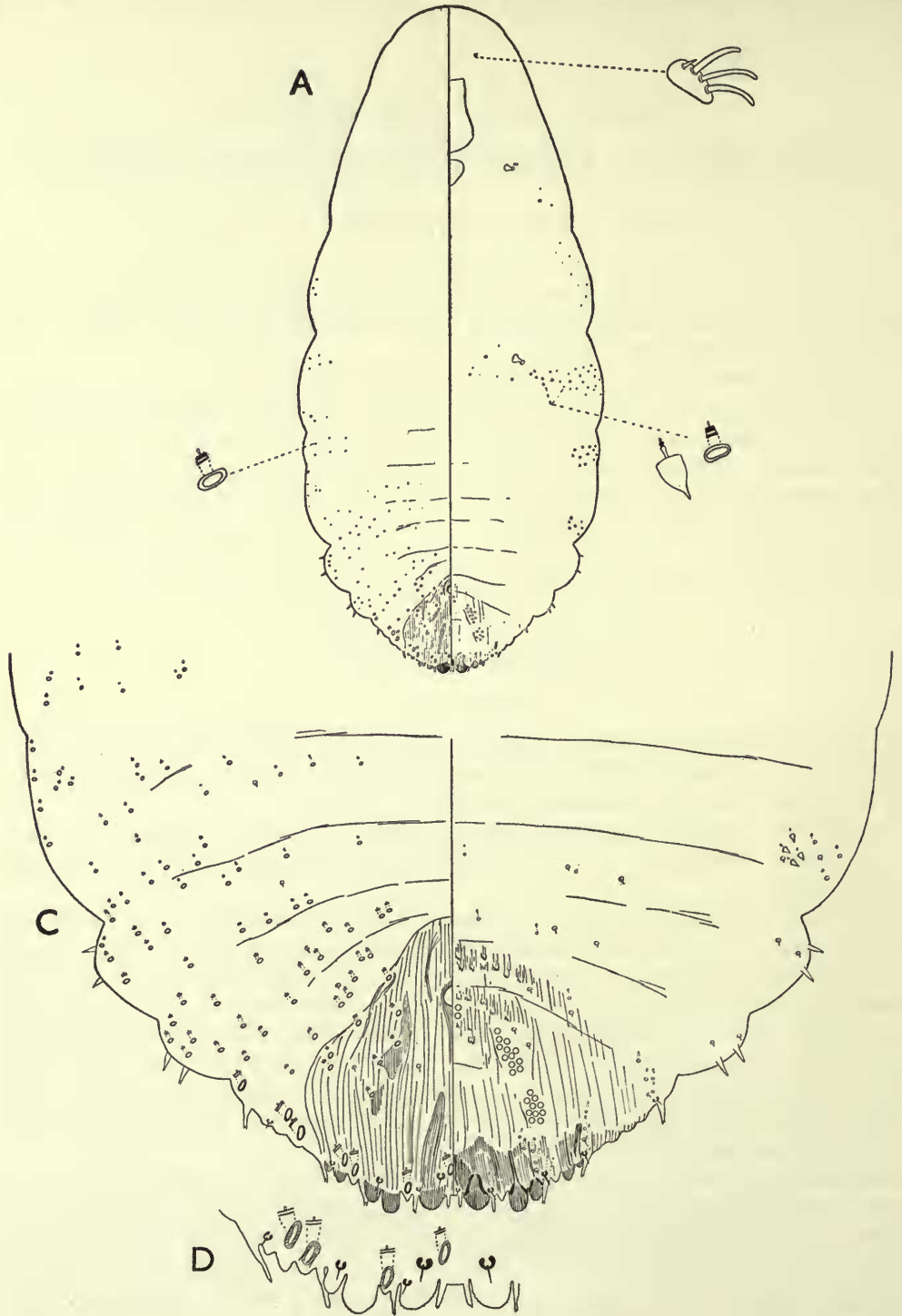


FIG. 1. *Fulaspis karroo* sp. n.

being a submedian group of about 4 on the sixth segment and anteriorly to second segment the submarginal and submedian groups merge. Submarginal groups present also on metathorax and mesothorax.

Ventral surface with perivulvar pores in 5 groups, a median group usually with 4-5 pores, antero-lateral groups each with 9-12 pores and postero-lateral groups each with 8-10 pores. Submarginal groups of micropores situated on fifth to seventh segments and groups of submarginal gland tubercles and ducts on metathorax and first abdominal segment, the ducts of similar size to those in corresponding positions on dorsum. Microducts also present on mesothorax and in median areas of third to fifth segments.

South Africa, Transvaal, Pienaarspoort, on *Acacia karroo*, E. C. G. Bedford, 15.xii.1954.

Balachowsky (1952) described and placed the genus *Fulaspis* in the subtribe Lepidosaphina, the distinguishing feature being the presence of either one or two macroducts between the median lobes. The two species so far described by Balachowsky (1952, 1954) are *F. guilliermi* from Guinea on *Macaranga* sp. and *F. bytinskii* from Palestine on *Acacia spirocarpa*. The new species comes closest to *F. guilliermi* in possessing perivulvar pores but apparently differs from both species in possessing a more rounded pygidium. All three species may be separated by the following key.

- | | | |
|----|--|-------------------------------|
| 1. | Perivulvar pores present | 2 |
| -. | Perivulvar pores absent | <i>bytinskii</i> Balachowsky |
| 2. | Dorsal ducts absent on seventh segment, ventral microducts present on pygidium | <i>karroo</i> sp. n. |
| -. | Dorsal ducts present on seventh segment, ventral microducts absent on pygidium | <i>guilliermi</i> Balachowsky |

Howardia stricklandi sp. n.

(Text-fig. 2)

Female scale pale brown, elongate, exuviae terminal, size approximately 3.0 mm. × 1.0 mm. Male scale not seen. The features of the scale are difficult to determine as the insect lives under the bark of young twigs.

Adult female fusiform, attaining a length of 2.5 mm., membranous except for pygidium. Marginal tubercles present on second to fourth segments, each heavily sclerotized and blunt and accompanied by a gland spine. Antennae represented by a tubercle with about 7 long, pointed setae. Anterior spiracles each with 5-6 pores, posterior spiracles usually with a single pore.

Pygidium with anal ring small and round, situated at base. Median lobes large, more or less triangular in shape, inner edges with 2 indentations, divergent, outer edges serrate. A pair of well developed scleroses set obliquely and arising from inner edges of the lobes. Second lobes apparently absent; third lobes represented by a serrate thickening of the margin. Gland spines slender and often curved, there being a short pair between median lobes and a short pair on either side of seventh segment. Anteriorly they are longer in groups of 3-5 on the margins as far as the fourth segment. Dorsal ducts all short and slender and except for a submedian pair on

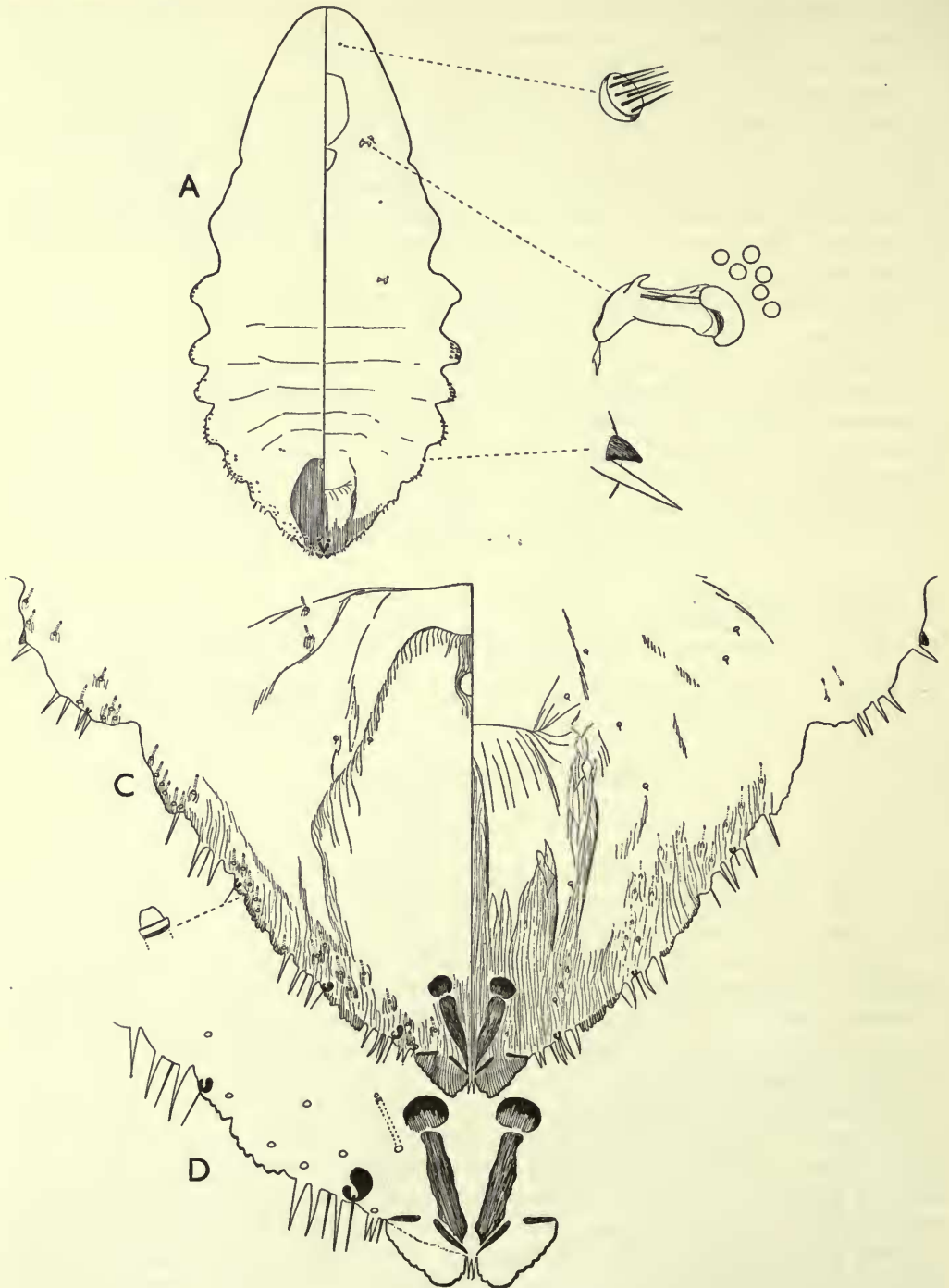


FIG. 2. *Howardia stricklandi* sp. n.

fifth segment are situated in small groups around the margin anteriorly to meta-thorax.

Ventral surface with perivulvar pores absent. Sub-marginal micropores present on pygidium only. Anterior abdominal segments with marginal groups of small gland tubercles, never occupying submedian positions.

Ghana, Tafo, on *Theobroma cacao*, A. H. Strickland, 6. vi. 1946.

A number of species have been placed in the genus *Howardia* Berlese & Leonardi but all have been assigned to other genera as they are not congeneric with the type *H. biclavis* (Comstock). This new species seems certainly to belong to *Howardia* although the main difference is the shape, which is fusiform and membranous whilst *H. biclavis* is turbinate and heavily sclerotised at maturity. The characters of the pygidium, however, are very similar especially in the form of the median lobes and clavate scleroses. Apart from the shape, the species may be separated by the absence of the second lobes and dorsal submedian ducts.

Balachowsky (1954) placed the genus *Howardia* in the group Diaspiformes of the subtribe Diaspidina mainly because of the circular shape of the female scale and the turbinate shape of the adult female of *biclavis*. The new species would seem to have closer affinities with the subtribe Lepidosaphina and the genus is probably aberrant within this group.

Lepidosaphes tapleyi sp. n.

(Text-fig. 3)

Female scale elongate, narrow, attaining a length of 2.5 mm., dull, pale brown to shiny reddish brown, exuviae same colour. Male scale pale brown about 1.2 mm. long.

Adult female about 1.0 mm. long, elongate-oval and widest across the second abdominal segment; derm membranous except for pygidium. Second and third abdominal segments each with a small pointed marginal tubercle which is heavily sclerotized. Antennae with a single curved seta. Anterior spiracles with 2 or 3 pores.

Pygidium with anal ring situated at base. Median lobes, well developed, each with 2 indentations on inner margin and 1 on outer margin. Second lobes with inner lobule about half as wide as a median lobe but about same length, with an indentation on each side; outer lobule about half as wide and long as inner lobule. Gland spines slender, arranged in pairs on each segment up to the third abdominal segment, those between the median lobes slightly longer than the lobes, becoming longer on the sixth and seventh segments and shorter anteriorly. Dorsal marginal macroducts 6 in number on either side of pygidium. Sixth segment with 1-3 submedian ducts, the usual number being 2. Fifth segment with a single submarginal duct and 2-3 submedian ducts. Fourth and third segments each with submarginal and submedian groups merging and ending on either side a short distance from the midline but sometimes forming a row across entire segment. Second segment with submarginal and submedian groups, the latter much reduced in number and never reaching the midline. First segment and metathorax with submarginal groups only.

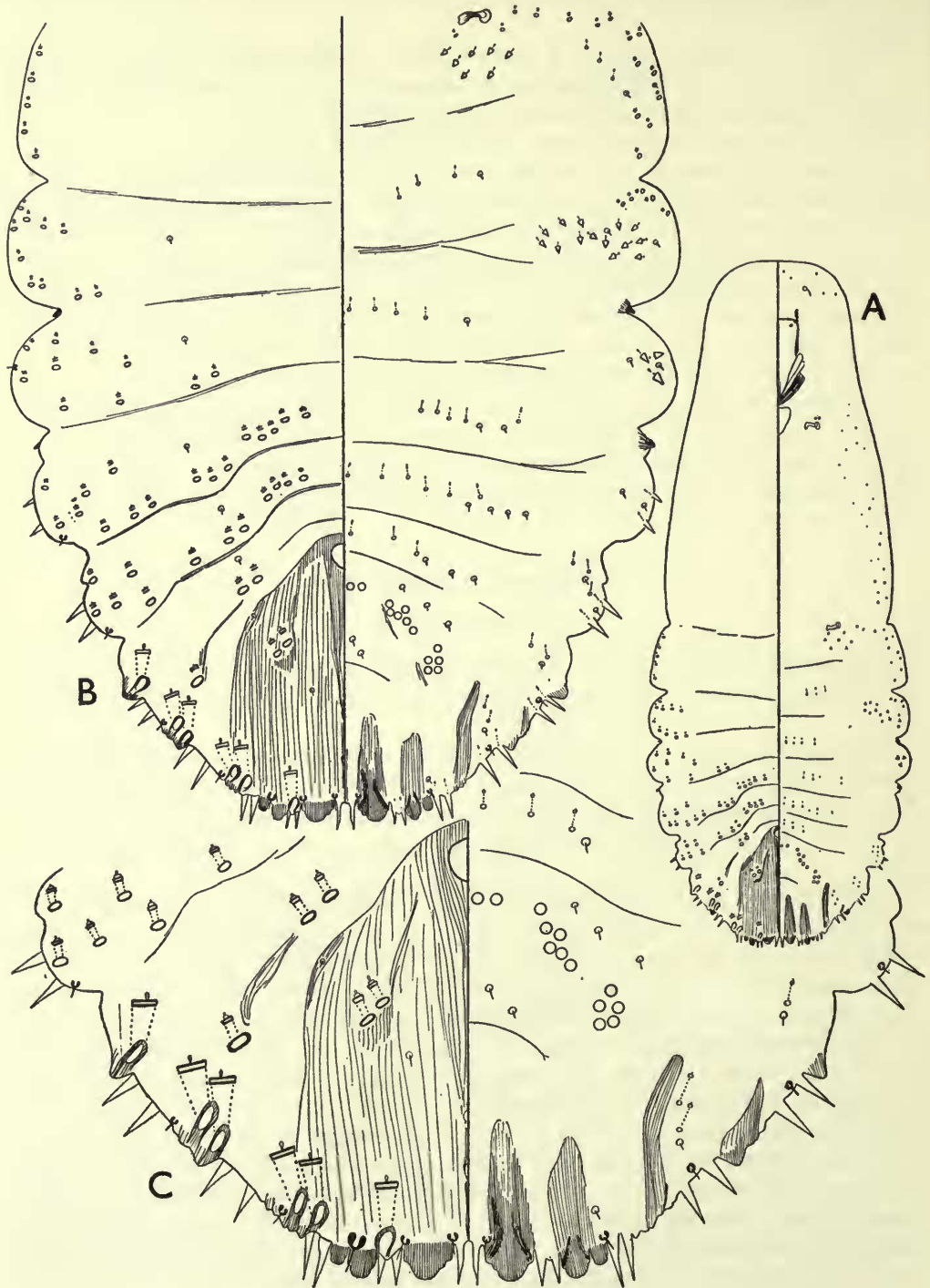


FIG. 3. *Lepidosaphes tapleyi* sp. n.

Ventral surface with perivulvar pores in 3 groups, the median group usually with 4 pores, the antero-lateral groups each with 5-8 pores and each postero-lateral group with 4-5 pores. Submarginal micropores present on fourth to sixth segments and transverse rows on median areas of all prevulvar abdominal segments. Submarginal gland tubercles present on first and second segments only, there being a group of about 12 on the first segment and always 3 on the second segment. Another group also present posterior to second pair of spiracles. Small ducts also present on margins of first segment and between the spiracles and margins on metathorax. Other smaller ducts situated on submargins of mesothorax.

Tanganyika, Usa, on sisal (*Agave sisalana*) on both surfaces of the leaves, 26. viii. 1955. Sudan, Shendi, on *Mangifera indica*, on under surfaces of leaves, W. J. Hall, 16.i.1958, (Holotype); Khartoum, *Citrus* sp., on both surfaces of the leaves, A. J. Jones, March 1959.

Causing severe but localized damage to sisal on the sides of dusty roads.

This species comes very close to *L. pallida* Green described from Ceylon but differs from all the typical material seen in a few small characters which seem to be constant and the specimens from Africa are, therefore, regarded as distinct. In *L. tapleyi* the marginal tubercles on the second and third segments are always pointed and heavily sclerotized whereas in *L. pallida* only the tubercles on the second segment are pointed, those on the third segment are flat and rounded. The submarginal tubercles on the second segment in *L. tapleyi* are always 3 in number but there are 5-6 in *L. pallida*. Posteriorly the gland spines in *L. tapleyi* are always in pairs whereas in *L. pallida* there are usually 3-4 on the third and fourth segments. Although the pattern of the dorsal ducts is similar in both species the ducts tend to be more numerous in *L. pallida* and there are often 4 or more submedian ducts on the fifth segment whereas in *L. tapleyi* there are never more than 3. Furthermore the colour of the scale in the material from Ceylon is of a yellow-brown or straw colour whereas in all the African material the scale is of a definite brown colour ranging from pale brown to reddish brown.

The species is named after R. G. Tapley, Entomologist, Department of Agriculture, Tanganyika, who first drew the writer's attention to it.

Rolaspis monile sp. n.

(Text-fig. 4)

Scale of female shiny white, elongate about 2.5 mm. long, exuviae pale brown. Male scale white, 1.0 mm. long. The scales are found on the edges of the leaves and the collector has remarked that the white margin thus formed is very conspicuous in the sunshine.

Adult female elongate-oval measuring approximately 1.75 mm. long. Dorsum at maturity becoming sclerotized in a characteristic fashion (see accompanying diagram). Antennae each with a single seta. Each anterior spiracle with about 4 pores.

Pygidium with a small anal ring situated towards base. With 2 pairs of lobes ;

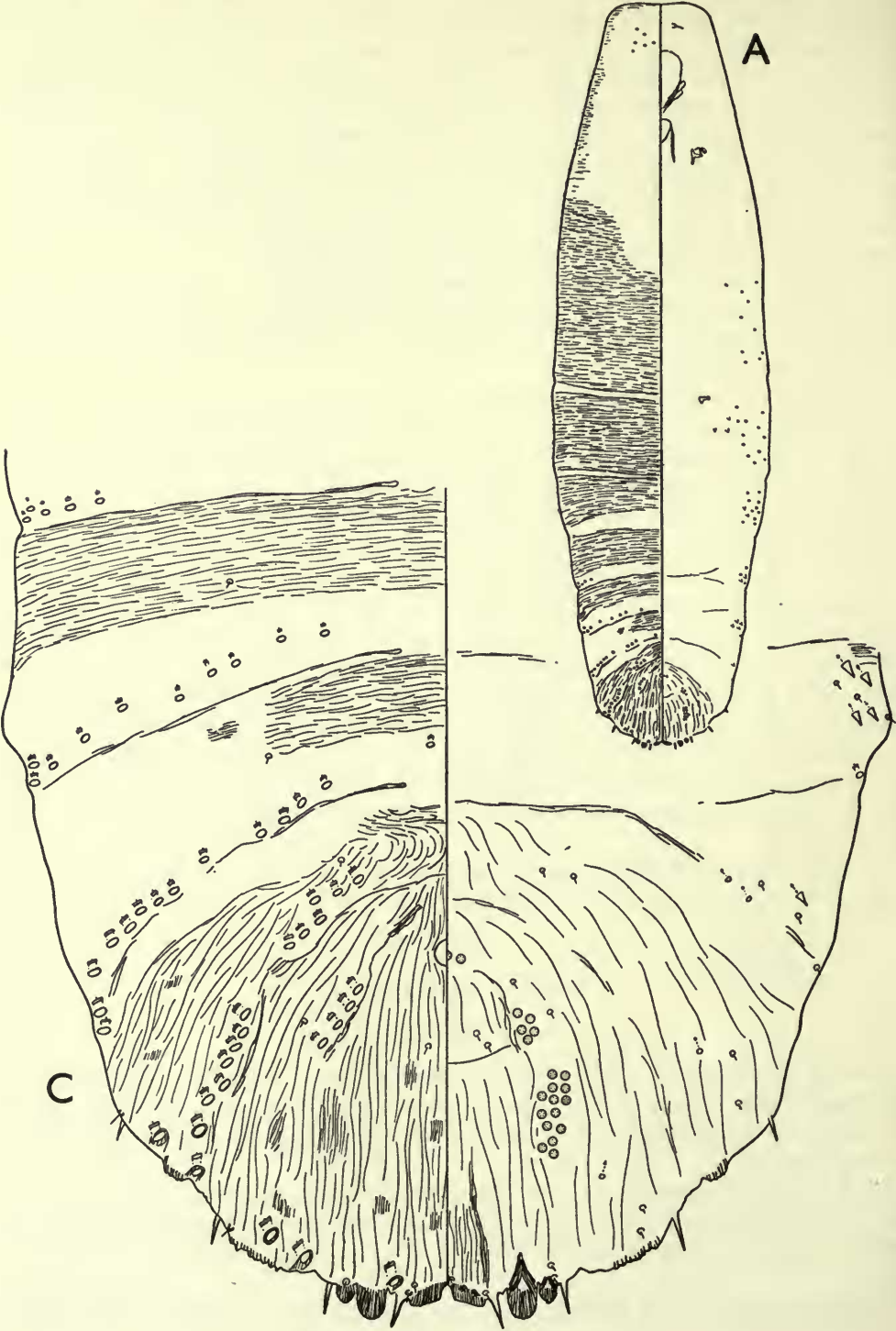


FIG. 4. *Rolaspis monile* sp. n.

median lobes very short and wide, slightly divergent with a distinct U shaped notch between and yoked at the base by a narrow sclerotized band, posterior edges straight and divergent; second lobes bilobed, inner lobule about as long as wide and projecting further than median lobes, apex rounded, outer lobule similar in shape but much smaller. Gland spines narrow and longer than second lobes, arranged singly on the margins up to fifth abdominal segment. Dorsal ducts about same size on fifth and posterior segments but becoming smaller anteriorly and towards the mid-line, there being a single marginal duct between median and second lobes and a pair on each margin of sixth segment, these accompanied by a group of about 2-4 submedian ducts in a single row. Fifth segment with a pair of marginal ducts and more or less single rows of submarginal and submedian ducts. Fourth and third segments with single rows of ducts, the submarginal and submedian groups merging and often present in median areas forming rows across entire segments. Second segment with a small group of submarginal ducts only.

Ventral surface of pygidium with perivulvar pores in 5 groups, a median group of 1-4 pores, antero-lateral groups each with 6-10 pores and postero-lateral groups each with 11-15 pores. Gland tubercles and small ducts in submarginal groups from fourth segment to metathorax, becoming more numerous anteriorly, those on the metathorax reaching as far as a point posterior to second spiracles. Mesothorax with a scattered group of small submarginal ducts.

Angola, Missão de Santa Cruz, Cuando, N. Riquinha, on *Diospyros batocana*, H. K. Munro, 11.viii.1952.

This is a distinctive species with very short median lobes coming closest to *R. procera* De Lotto described from Kenya. It differs from this species in having much fewer dorsal ducts and also in the character of the marginal pygidial ducts which are normal instead of possessing microducts on the capitata heads.

The squat median lobes suggest a close relationship to the genus *Voraspis* Hall. This genus contains species with supplementary rows of pores on segments 3, 4 and 5 which, apart from one or two occasional pores, are absent in *R. monile*.

Rolaspis syrinx sp. n.

(Text-fig. 5)

Scale of adult female white, slightly widened apically; exuviae pale brown, length 2.0 mm. Male scale white with smooth surface, uncarinated, length 1.2 mm.

A small elongate species measuring approximately 1.0 mm. in length. Body moderately sclerotized at maturity except pygidium which is more heavily sclerotized. Antennae each with a single stout seta. Anterior spiracles each with about 5 pores. Pygidium with small anal ring situated towards base. Two pairs of lobes present; median lobes well developed, divergent, the space between forming a V, inner and outer edges serrated and the bases yoked together by a narrow sclerotized band; second lobes bilobed, inner lobule longer than wide with a notch on either side, projecting a little more posteriorly than median lobes, outer lobule similar in shape to inner lobule but much smaller. Gland-spines paired, in each case composed of a

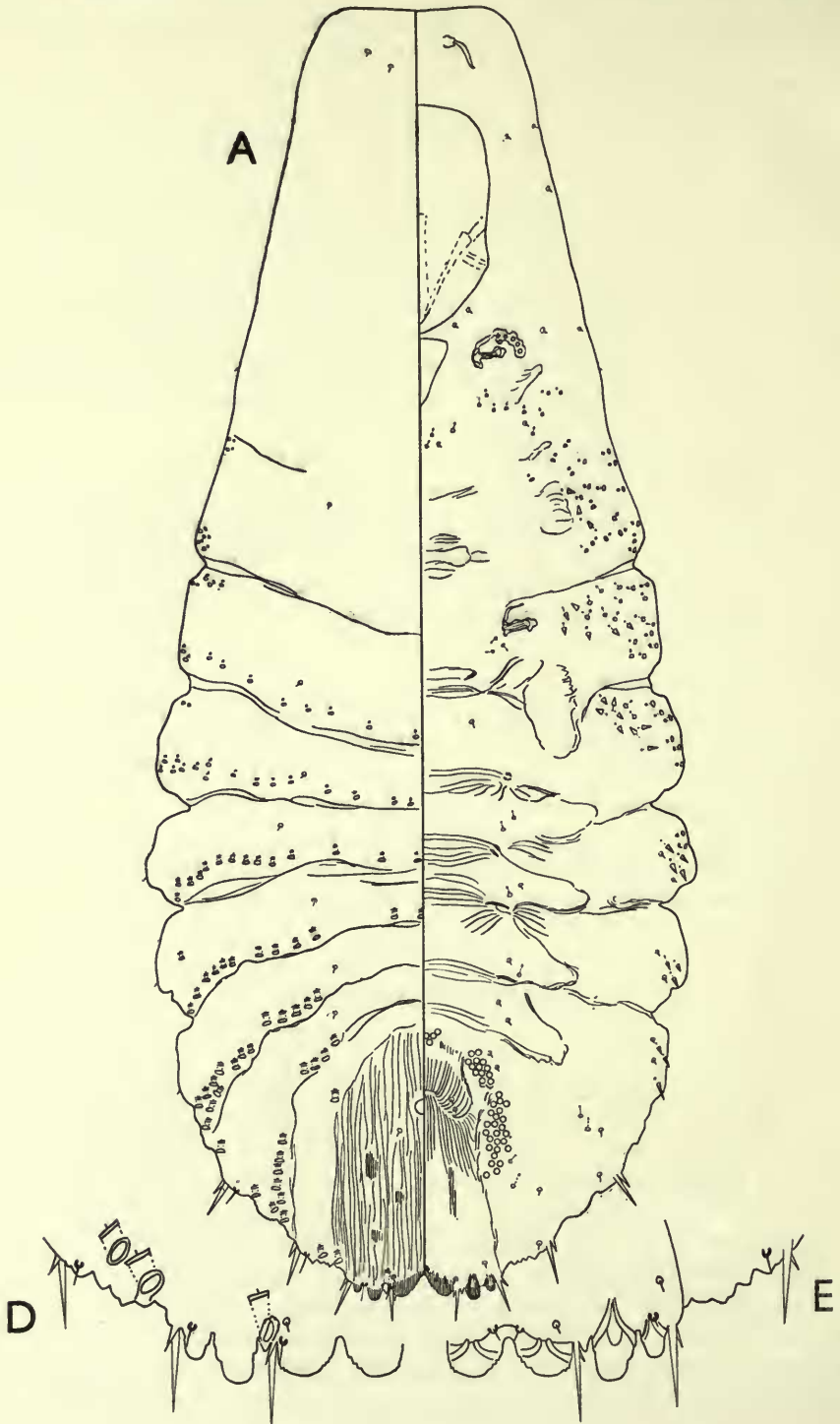


FIG. 5. *Rolaspis syrinx* sp. n.

long, slender spine and another very short spine, there being one such pair between median and second lobes and a pair on margins anteriorly to fifth segment. Dorsal tubular ducts of similar shape and size up to third abdominal segment and becoming smaller anteriorly. A single marginal duct present between median and second lobes and a pair on each margin of sixth segment, the latter accompanied usually by a single submedian duct but these often absent. Fifth segment with about 3 marginal ducts and submarginal and submedian groups. Anteriorly the submarginal and submedian groups merge in well defined rows and on the third segment and up to metathorax the ducts form transverse rows across the entire segments.

Ventral surface of pygidium with perivulvar pores in 5 groups, a median group with 3-6 pores, antero-lateral groups each with 12-17 pores and postero-lateral groups each with 17-30 pores, the lateral groups often merging. Gland tubercles present in submarginal groups on fourth segment and becoming more numerous anteriorly to mesothorax, these accompanied on the second and anterior segments with groups of tubular ducts of a similar size to those in corresponding positions on dorsum. Short microducts associated with these ducts on the thorax and anterior abdominal segments and in a noticeable group posterior to first pair of spiracles. Others present in submedian areas of metathorax and abdominal segments and also in submarginal areas of pygidium.

On the leaves of *Bulbophyllum falcipetalum*, Njala, Sierra Leone, F. A. Squire, II. xi. 1948.

This species comes nearest to *R. spiculata* Hall but differs in having each gland spine on the pygidium accompanied by a small adventitious gland spine and also in the fewer dorsal ducts in the submedian group of the sixth segment.

DESCRIPTION OF FIGURES

The lettering used in the figures is as follows:—A. Adult female, general aspect. B. Abdomen. C. Pygidium. D. Dorsal margin of pygidium. E. Ventral margin of pygidium.

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